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मानक

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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 2973 (1983, Reaffirmed 2010): Specification for Bicycle Steering Head Assembly (PH Type) (First Revision). UDC 629.118.3.014.5



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



Indian Standard

SPECIFICATION FOR BICYCLE STEERING HEAD ASSEMBLY (PH TYPE)

(First Revision)

1. Scope — Covers the requirements for bicycle steering head assembly of *PH* type suitable for being fitted in popular sizes of bicycles in use in the country.

2. Nomenclature — The nomenclature of the various components comprising the steering head assembly shall be as indicated in Fig. 1.

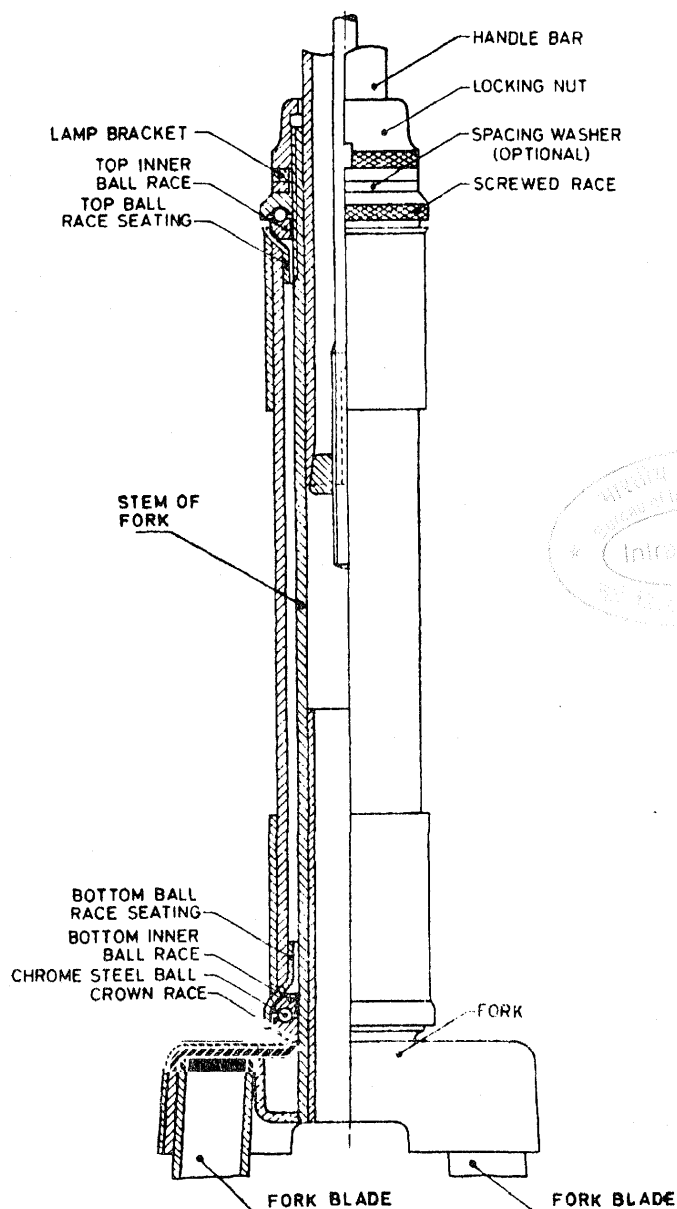


FIG. 1 BICYCLE STEERING HEAD ASSEMBLY

Adopted 28 July 1983

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Gr 3

INDIAN STANDARDS INSTITUTION
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NEW DELHI 110002

IS : 2973 - 1983

3. Material

3.1 Ball Race Seatings — The top and bottom ball race seatings, when they form a composite unit with their ball races, shall be made of steel conforming to IS : 226-1975 'Specification for structural steel (standard quality) (fifth revision)'. When the ball race seatings do not form composite units with their ball races, they shall be made of steel conforming to type DD of IS : 513-1973 'Specification for cold-rolled carbon steel sheets (second revision)'.

3.2 Inner Ball Races — The top and bottom inner ball races, when they form composite units with their respective race seatings, shall be made of steel conforming to IS : 226-1975. They shall be suitably heat-treated to have a minimum hardness of 600 HV (with 5 kgf load) or its equivalent in other scales (see IS : 4258-1967 'Hardness conversion tables for metals'). Where the inner ball races are separately provided, they shall be made of steel conforming to Type DD of IS : 513-1973. They shall be suitably heat-treated to give a minimum hardness of 600 HV (with 5 kgf load) or its equivalent in other scales.

3.3 Crown Race and Screwed Race — These shall be made of steel conforming to IS : 226-1975, and shall be suitably heat treated to obtain a minimum hardness of 600 HV (with 5 kgf load) or its equivalent in other scales (see IS : 4258-1967).

3.4 Balls — These shall conform to Grade 200 of IS : 2898-1976 'Steel balls for rolling bearings (first revision)'.

3.5 Lamp Bracket and Locking Nut — These shall be made of steel conforming to IS : 226-1975.

Note — In addition to the minimum properties specified, the materials shall have other metallurgical properties which would make them suitable for fabrication of the particular component in accordance with good manufacturing practice.

4. Dimensions

4.1 Ball Race Seatings — The dimensions of the top and bottom ball race seatings, when they do not form composite unit with their ball races, shall conform to those given in Fig. 2 and 3.

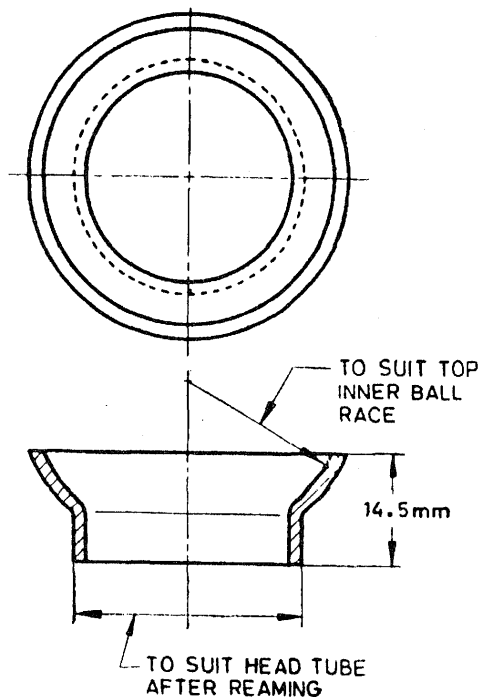


FIG. 2 TOP BALL RACE SEATING

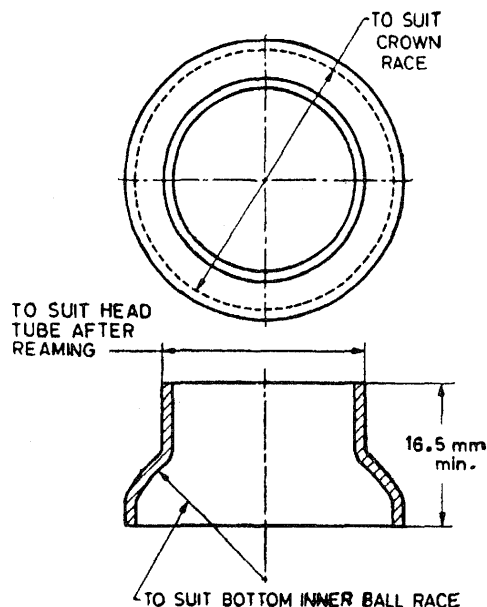


FIG. 3 BOTTOM BALL RACE SEATING



AMENDMENT NO. 1 NOVEMBER 1986

TO

IS:2973-1983 SPECIFICATION FOR BICYCLE STEERING
HEAD ASSEMBLY (PH TYPE)

(First Revision)

(Page 2, clause 3.4) - Substitute the following for the existing clause:

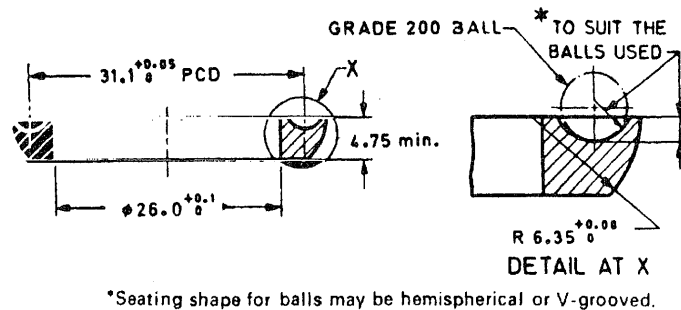
"3.4 Steel balls used shall conform to any one of the following grades:

Grade 105 Cr 1 of schedule IV of IS:1570-1961 'Schedules for wrought steels for general engineering purposes' or Grade 103 Cr 1 of IS:4398-1972 'Specification for carbon-chromium steel for the manufacture of balls, rollers and bearing races (*first revision*)'. The finished balls shall conform to Grade 200 of IS:2898-1976 'Specification for steel balls for rolling bearing (*first revision*)'. These shall be heat treated to achieve hardness between 708 HV to 890 HV (with 5 kgf load). These shall also be truly spherical and uniform in size."

(EDC 26)

Reprography Unit, ISI, New Delhi, India

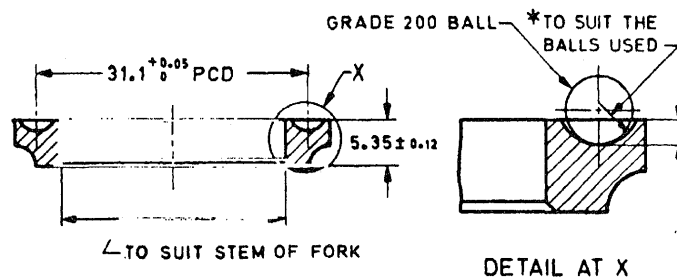
4.2 Inner Ball Races — The dimensions of the top and bottom inner ball races, when they do not form composite units with their respective race seatings, shall conform to those given in Fig. 4.



All dimensions in millimetres.

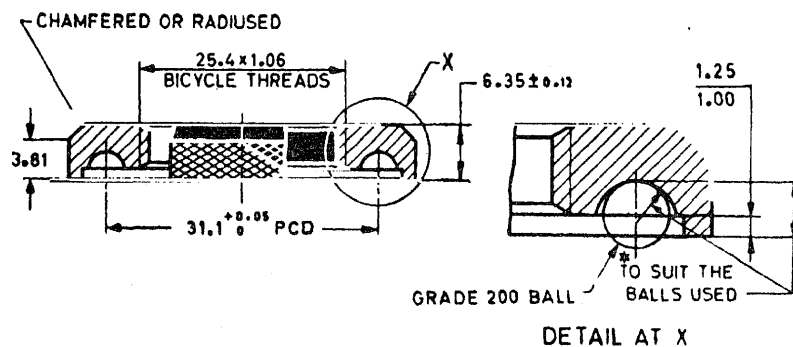
FIG. 4 TOP AND BOTTOM INNER BALL RACE

Race and Screwed Race — The dimensions of the crown race and screwed race shall conform to those given in Fig. 5 and 6. The screw threads on the race shall comply with the dimensions



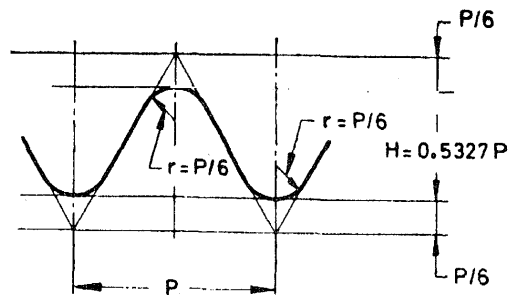
All dimensions in millimetres.

FIG. 5 CROWN RACE



All dimensions in millimetres.

FIG. 6 SCREWED RACE



Size	Pitch	Internal Thread		
		Major Dia	Effective Dia	Minor Dia
25.4x1.06	1.06	25.4	+0.117	+0.338
			24.836	24.272
			+0.000	+0.000

FIG. 7 FORM OF THREAD

4.4 *Lamp Bracket* — The dimensions of the lamp bracket shall conform to those given in Fig. 8.

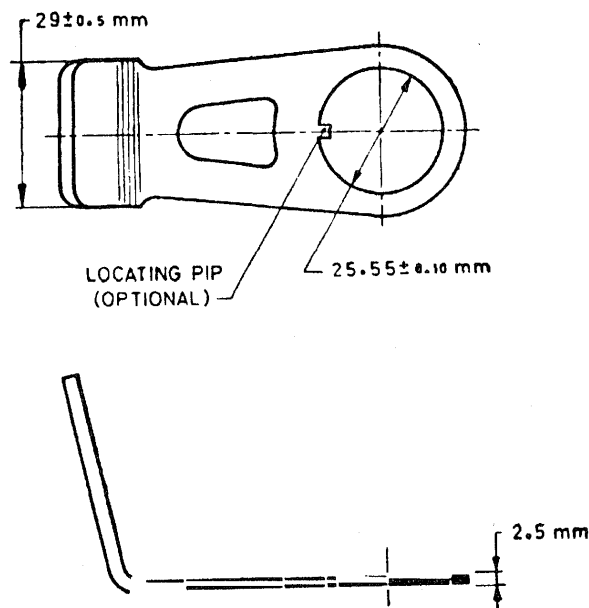


FIG. 8 LAMP BRACKET (SCHEMATIC)

4.5 *Locking Nut* — The dimensions of the locking nut shall conform to those given in Fig. 9.

Note — In all the figures mentioned in 4.1 to 4.5, only important interchangeable dimensions have been given and dimensions not specified are left to the discretion of the manufacturer.

5. Finish

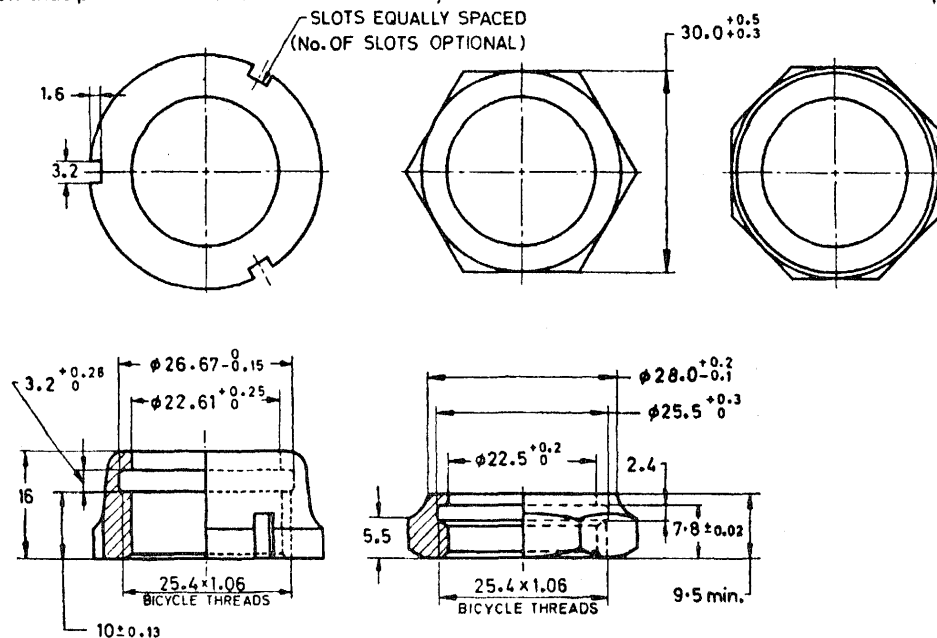
5.1 *Ball Race Seatings* — The top and bottom ball race seatings shall be nickel-chrome plated to Service Grade No. 1 (Classification No. SNi 10b Crr) of IS:1068-1968 'Specification for electroplated coatings of nickel and chromium on iron and steel (first revision)'.

5.2 Inner Ball Races and Crown Races — The top and bottom inner races shall be provided with protective self finish. The crown races shall be either chemically coloured or zinc plated to Service Condition No. 2 (Classification No. FeZn12) of IS : 1573-1970 'Specification for electroplated coatings of zinc on iron and steel (first revision)' or nickel chrome plated for Service Grade No. 1 (Classification No. SNi 10b Crr) of IS : 1068-1968.

5.3 Screwed Race — The screwed race shall be nickel-chrome plated to Service Grade No. 1 (Classification No. SNi 10b Crr) of IS : 1068-1968 or zinc plated to Service Condition No. 2 (Classification No. FeZn12) of IS : 1573-1970 or cadmium plated to Service Condition No. 2 (Classification No. Cd8 1) of IS : 1572-1968 'Specification for electroplated coatings of cadmium on iron and steel (first revision)'.

5.4 Locking Nut — The locking nut shall be nickel-chrome plated to Service Grade No. 1 (Classification No. SNi 10b Crr) of IS : 1068-1968 or cadmium plated to Service Condition No. 2 (Classification No. Cd8) of IS : 1572-1968 or zinc plated to Service Condition No. 2 (Classification No. FeZn12) of IS : 1573-1970.

5.5 Lamp Bracket — The lamp bracket shall be nickel- and chromium-plated and the electroplated coating shall conform to Service Grade No. 1 with designation SNi 10b Crr of IS : 1068-1968 with the provision that p- or d-nickel and f-chromium may be substituted for b-nickel and r-chromium respectively.



Any one of the three types as shown above may be adopted.

All dimensions in millimetres.
FIG. 9 LOCKING NUT

6. Test — After assembly, the steering head assembly unit shall rotate freely.

7. Marking — The steering head assembly shall be marked with the manufacturer's name, his initials or trade-mark and the country of origin.

7.1 ISI Certification Marking — Details available with the Indian Standards Institution.

EXPLANATORY NOTE

This standard was first issued in 1964. The present revision has been done to make it up to date and takes into account the experience gained since the adoption of the standard in 1964.

In this revision, the steering head assembly suitable for *PH* type has been covered. A separate Indian Standard is under preparation for '*R*' type of steering head assembly.

AMENDMENT NO. 2 AUGUST 1987
TO
IS : 2973-1983 SPECIFICATION FOR BICYCLE
STEERING HEAD ASSEMBLY (pH TYPE)
(First Revision)

(Page 4, Fig. 8) — Substitute the following for the existing figure:

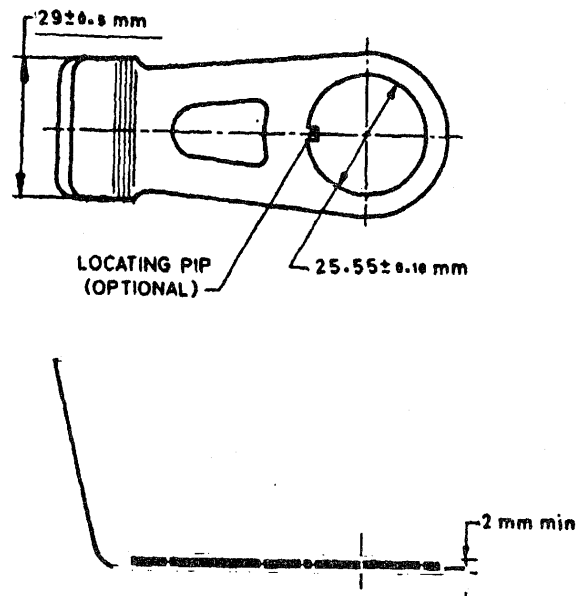


FIG. 8 LAMP BRACKET (SCHEMATIC)

(Page 5, clause 6) — Add the following new clause after 6:

6.1 Lamp Bracket — Lamp brackets shall be subjected to load test. Typical arrangements for the load test have been illustrated in Fig. 10. Test load of 15 kgf shall be applied for one minute. The permissible deflection, at the end of the test shall not exceed 2 mm.

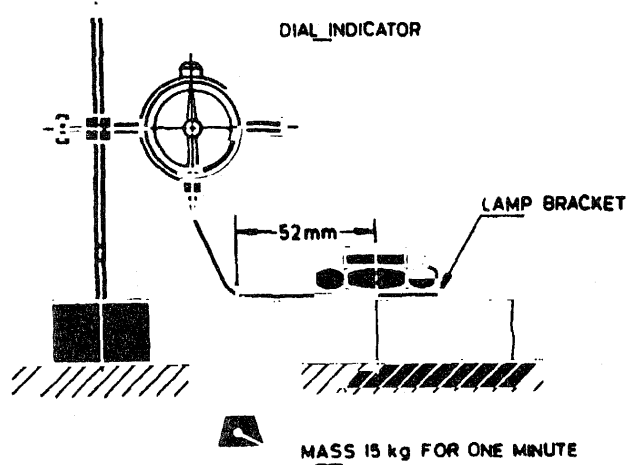


FIG. 10 ARRANGEMENT FOR LOAD TEST OF LAMP BRACKET